

Amyand's hernia a challenge in acute care surgery

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ABSTRACT. Introduction: Amyand's hernia is any inguinal hernia containing the vermiform appendix. It is an inguinal hernia very rare and the finding of appendicitis in the inguinal hernia it is also rarer. Case present: A 62 years-old male patient is admitted to the First Surgical Clinic, St Spiridon University Hospital in emergency for a strangulated inguinal hernia symptomatology. Surgical intervention is performed through an open approach. Intraoperative exploration revealed the presence of acute appendicitis in the hernia sac. We performed open appendectomy through the inguinal incision and to solve the parietal defect, we performed Bassini technique hernia repair. No adverse events occurred postoperatively. Conclusions: Appendicitis within an Amyand's hernia is a rare event and it is a challenge in acute care surgery. The preoperative diagnosis is very difficult because it simulates the behavior of an incarcerated or strangulated inguinal hernia. The appendicitis influences the type of surgery.

KEY WORDS: Amyand's hernia, appendicitis, inguinal hernia

INTRODUCTION

Appendix is found in the inguinal hernial sac and is known as Amyand's hernia, which can have a wide range of forms, ranging from a normal appendix in an inguinal hernia to acute appendicitis in an inguinal hernia and even with peritonitis and abdominal sepsis. The incidence of appendix within an inguinal hernia is very rare, less than 1% and the finding of appendicitis in the inguinal hernia is only 0.1% (1). The inflammatory status of the vermiform appendix determines the surgical approach and the type of hernia repair (2).

CASE PRESENT

A 62 years-old male patient is admitted to the emergency surgical department and describes an acute onset with abdominal pain, nausea and a painful mass in the right groin area, which appeared after lifting weights and which was reducible until 24 hours ago when it becomes

very painful, irreducible and appears redness on the overlying skin.

Physical examination revealed normal vital signs, a tender abdomen in the right iliac fossa and a firm irreducible, particularly tender mass of 7 cm in the right groin. The laboratory findings showed indicated inflammation, as reflected by a white cell count of $11.6 \times 10^3/\mu\text{L}$ and a C-reactive protein level of 12.5 mg/dL.

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Abdominal X-ray revealed no abnormal findings and ultrasound performed in emergency revealed a 38 mm dehiscence of the right inguinal abdominal wall with loops of bowel in the hernia sac.

Based on clinical examination and imaging a strangulated hernia is suspected and surgical intervention is performed through an open approach with inguinal incision. The external inguinal ring was exposed with an obvious hernia sac containing bowel. The hernia sac was dissected away from the cord structure, which on entry revealed an inflamed appendix (Fig. 1). The incarcerated appendix and part of cecum was found to be viable without evidence of perforation. So, the diagnosis of Amyand hernia was made intraoperatively.

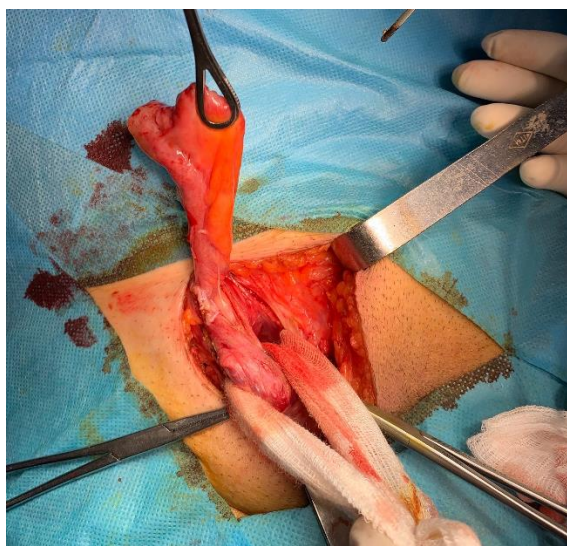


Fig. 1 Amyand hernia – intraoperative view: acute appendicitis in the hernia inguinal sac.

We performed open appendectomy through the inguinal incision and after we ensured the cecum was freed from surrounding attachments, we reintroduced the bowel back into the abdomen. To solve the parietal defect, we performed Bassini technique hernia repair. No adverse events occurred postoperatively. The

patient continued to make great physical efforts, which led to the recurrence of the hernia after 2 years, which obliged us to re-intervention and surgical cure of the inguinal hernia with mesh, Lichtenstein technique.

DISCUSSION

Although rare in the career of a general surgeon, Amyand's hernia dates back to the 18th century when a French, Claudius Amyand (1680–1740), a surgeon to King George I, King George II, and Queen Ann and principal surgeon to the St. George's and the Westminster hospitals of London, did the first appendectomy on an 11-year-old boy in 1735, for a perforated appendicitis in a right inguinal hernia sac and fecal fistula. The term Amyand's hernia commonly refers to any inguinal hernia containing the vermiform appendix. At the same time, Amyand performed the first appendectomy with postoperative recovery and also described this rare hernia (2,3).

Losanoff and Basson have distinguished four basic types of Amyand's hernia, which should be treated differently (Table 1) (4).

Amyand hernias require individualized attention to decide how to manage both the appendix and the hernia. Incidental appendectomy is not recommended in cases without inflammation if the appendix can be reduced easily without trauma. However, if significant trauma occurs to the appendix while it is being reduced, appendectomy is indicated because the trauma caused to the appendix while being reduced increases the risk of appendicitis developing postoperatively. (4). Lombardo describes a case with a recurrent right inguinal hernia and appendix adherent to the mesh in a direct hernia sac. The adhesions were divided by sharp dissection, an appendectomy was performed, and the mesh was excised (5).

Kose et al. retrospectively reviewed a case series of five Amyand hernia patients with appendectomy for a normal-appearing appendix and inguinal hernia repair with mesh placement.

In this series, there were no postoperative complications or hernia recurrences within one year. if the appendix whose fibrous connections

inside the hernial sac prove difficult in dissection, appendectomy must be performed at the time of the operation (6).

Table 1. Types of Amyand hernias and surgical management after Losanoff and Basson (4)

	Description	Surgical management
Type 1	Normal appendix within an inguinal hernia	Hernia reduction, mesh repairs, appendectomy in young patients
Type 2	Acute appendicitis within hernia, no abdominal sepsis	Appendectomy through hernia primary repair of Hernia, no mesh
Type 3	Acute appendicitis within an inguinal hernia, abdominal wall, or peritoneal sepsis	Laparotomy, appendectomy, primary repair of hernia, no mesh
Type 4	Acute appendicitis within an inguinal hernia, related or unrelated abdominal pathology	Manage as type 3 hernia and management of concomitant disease as appropriate

In many cases, Amyand's hernia presents itself as an incarcerated or strangulated inguinal hernia. Preoperative clinical diagnosis of Amyand's hernia is difficult to achieve even in cases of acute appendicitis in the hernial sac because there are no specific symptoms or signs (7). In our case, the patient had acute appendicitis in the hernial sac that mimicked a strangulated hernia. Parietal defect repair was performed without mesh placement, due to the controversy surrounding the use of mesh in contaminated abdominal wall defects, was not indicated here due to the high risk of wound infection.

Laparoscopic appendectomy followed by open hernia repair may be a good alternative (8). Akaishi et al. reported case of Amyand's hernia with appendix perforation treated by two-stage surgery consisting of laparoscopic appendectomy followed by elective inguinal hernioplasty (9).

The presence of appendix with in femoral hernia sac is known as De Garengeot hernia. The incidence of such an event is very low and surgical treatment is usually performed via inguinal approach (10).

CONCLUSIONS

The presence of appendix with in hernial sac is known as Amyand hernia. Appendicitis within an Amyand's hernia is a rare event and it is a challenge in acute care surgery. The preoperative diagnosis is very difficult because it simulates the behavior of an incarcerated or

strangulated inguinal hernia. The appendicitis influences the type of surgery. Presence of infection is a contraindication for mesh placement.

Conflicts of Interest: The authors declare no conflict of interest.

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